

CLAIMS:

1. A method of making an electronic shelf label assembly, comprising:

providing a support comprising a display area, an overlay area adjacent the display area, an exposed area adjacent the overlay area, and a plurality of conductive contacts, wherein each of the plurality of conductive contacts comprises a first conductive portion within the display area and a second conductive portion in the exposed area;

providing a bistable display comprising a substrate and a plurality of electrically conductive contact pads on the substrate;

attaching the display to the display area of the support, wherein the first conductive portion of the conductive contacts of the support contact the electrically conductive contact pads of the display;

providing a printable overlay comprising a window; and

attaching the printable overlay to the overlay area of the support such that at least a portion of the display in the display area of the support is viewable through the window.

2. The method of claim 1, further comprising printing the printable overlay.

3. The method of claim 2, wherein printing the printable overlay is done by ink jet printing, thermal printing, electrophotographic imaging, or manual printing.

4. The method of claim 2, wherein the printing comprises an alphanumeric character, an image, a symbol, a Universal Product Code, or a combination thereof.

5. The method of claim 1, wherein an electrically conductive adhesive is applied to the first conductive portion of the conductive contacts of the support, to the electrically conductive contact pads of the display, or both.

6. The method of claim 5, wherein the adhesive is an anisotropic adhesive.

7. The method of claim 5, wherein the adhesive is an adhesive strip.

8. The method of claim 1, wherein the printable overlay is adhesively attached to the support.

9. The method of claim 8, wherein the printable overlay comprises an adhesive backside, and wherein the backside of the printable overlay is attached to the support.

10. The method of claim 1, wherein providing the printable overlay includes peeling the overlay from a backing sheet, wherein the printable overlay comprises an adhesive backside.

11. The method of claim 1, wherein the support further comprises a retainer.

12. The method of claim 11, wherein the printable overlay is attached to the support using the retainer.

13. The method of claim 11, wherein the retainer is a tab, slot, clip, bracket, peg, or combination thereof.

14. The method of claim 1, wherein the window of the printable overlay comprises a transparent material.

15. The method of claim 1, wherein the printable overlay comprises a transparent material.

16. The method of claim 1, wherein a second display is attached to the support.

17. The method of claim 1, wherein providing the printable overlay comprises removing the printable overlay from a sheet comprising a plurality of printable overlays.

18. The method of claim 1, wherein providing the printable overlay comprises removing the printable overlay from a roll comprising a plurality of printable overlays.

19. The method of claim 1, wherein the display further comprises a first electrode layer on the substrate, a layer of bistable material on at least a portion of the first electrode layer, patterned electrically conductive ink on at least a portion of the bistable material, dielectric material over at least a portion of the bistable material, and a second electrode layer over the dielectric material and in contact with the patterned electrically conductive ink, wherein the plurality of electrically conductive contact pads are on the first electrode layer and in contact with the second electrode layer.

20. The method of claim 19, wherein the bistable material is cholesteric nematic liquid crystal material.

21. An electronic shelf label assembly, comprising:
a support comprising a display area, an overlay area adjacent the display area, an exposed area adjacent the overlay area, and a plurality of conductive contacts, wherein each of the plurality of conductive contacts

comprises a first conductive portion within the display area and a second conductive portion in the exposed area;

a display comprising a substrate, and a plurality of electrically conductive contact pads on the substrate, wherein the display is attached to the display area of the support, and wherein the first conductive portion of the conductive contacts of the support contact the electrically conductive contact pads of the display; and

a printable overlay comprising a window, wherein the printable overlay is attached to the overlay area of the support such that at least a portion of the display in the display area of the support is viewable through the window.

22. The assembly of claim 21, wherein the printable overlay is printed.

23. The assembly of claim 22, wherein the printing is ink jet printing, thermal printing, electrophotographic imaging, or manual printing.

24. The assembly of claim 22, wherein the printing comprises an alphanumeric character, an image, a symbol, a Universal Product Code, or a combination thereof.

25. The assembly of claim 21, further comprising an electrically conductive adhesive on the first conductive portion of the conductive contacts of the support, on the electrically conductive contact pads of the display, or both.

26. The assembly of claim 25, wherein the adhesive is an anisotropic adhesive.

27. The assembly of claim 25, wherein the adhesive is an adhesive strip.

28. The assembly of claim 21, wherein the printable overlay comprises an adhesive backside that contacts the support.

29. The assembly of claim 28, wherein the printable overlay further comprises a peelable backing sheet on the adhesive backside.

30. The assembly of claim 21, wherein the window of the printable overlay comprises a transparent material.

31. The assembly of claim 21, wherein the printable overlay comprises a transparent material.

32. The assembly of claim 21, wherein the printable overlay is one of a plurality of printable overlays on a printable media.

33. The assembly of claim 32, wherein the printable media is in roll form.

34. The assembly of claim 32, wherein the printable media is in sheet form.

35. The assembly of claim 21, wherein the printable overlay comprises more than one window.

36. The assembly of claim 21, comprising more than one display.

37. The assembly of claim 21, wherein the support further comprises a retainer.

38. The assembly of claim 37, wherein the printable overlay is attached to the support with the retainer.

39. The assembly of claim 37, wherein the retainer is a tab, slot, clip, bracket, peg, or combination thereof.

40. The assembly of claim 21, wherein the support further comprises a shelving attachment.

41. The assembly of claim 40, wherein the shelving attachment comprises a tab, clip, bracket, fastener, or combination thereof.

42. The assembly of claim 21, wherein the plurality of conductive contacts are printed on the support.

43. The assembly of claim 21, wherein the support is injection molded plastic.

44. The assembly of claim 43, wherein the plurality of conductive contacts are molded into the support.

45. The assembly of claim 44, wherein the conductive contacts are metal or conductive plastic.

46. The assembly of claim 21, wherein the plurality of conductive contacts are a conductive appliqu  on the support.

47. The assembly of claim 21, wherein the overlay area of the support comprises a recess in the support.

48. The assembly of claim 21, wherein the display area of the support comprises a recess in the support.

49. The assembly of claim 21, wherein the display further comprises a first electrode layer on the substrate, a layer of bistable material on at least a portion of the first electrode layer, patterned electrically conductive ink on at least a portion of the bistable material, dielectric material over at least a portion of the bistable material, and a second electrode layer over the dielectric material and in contact with the patterned electrically conductive ink, wherein the plurality of electrically conductive contact pads are on the first electrode layer and in contact with the second electrode layer.

50. The assembly of claim 49, wherein the bistable material is cholesteric nematic liquid crystal material.